

*What is claimed is:*

1. A gas delivery system capable of delivering an anesthesia gas to a plurality of gas outlets, the system comprising:

an oxygen inlet that receives oxygen from an oxygen source;

a pressure regulator having an inlet that receives oxygen from the oxygen inlet and having an outlet that provides oxygen at a lower pressure;

an anesthesia gas source having an inlet coupled to receive low pressure oxygen from the outlet of the pressure regulator and capable of adding anesthesia gas to the low pressure oxygen;

a first gas delivery outlet coupled to a gas delivery device having one or more living specimen interfaces and capable of providing anesthesia gas and oxygen to the one or more living specimen interfaces; and

a second gas delivery outlet coupled to an induction chamber and capable of providing anesthesia gas and oxygen to the induction chamber.

2. The gas delivery system of claim 1 wherein the first gas delivery outlet comprises an outlet port and a first flow control disposed between the anesthesia gas source and the outlet port.

3. The gas delivery system of claim 2 wherein the second gas delivery outlet comprises an outlet port and a second flow control disposed between the anesthesia gas source and the outlet port.

4. The gas delivery system of claim 3 wherein the first and second flow control each allow independent control of gases to the first gas delivery outlet and to the second gas delivery outlet.

5. The gas delivery system of claim 4 wherein the first flow control allows control of gases from about 0 L/min to about 5 L/min to the first gas delivery outlet.

6. The gas delivery system of claim 1 wherein the induction chamber further comprises a gas scavenging system that collects anesthesia gas and oxygen that escapes from the induction chamber interior.
7. The gas delivery system of claim 6 wherein the scavenging system includes a set of holes disposed on a skirt attached to the bottom of the induction chamber, the set of holes in gaseous communication with an exhaust conduit, the set of holes capable of collecting anesthesia gas outside the induction chamber when a suitable negative pressure is applied thereto.
8. The gas delivery system of claim 7 wherein the set of holes are peripherally disposed about the induction chamber.
9. The gas delivery system of claim 1 further comprising a purge inlet capable of providing oxygen to the induction chamber interior.
10. The gas delivery system of claim 1 wherein the gas delivery device further comprises an inlet for receiving anesthesia gas and oxygen and at least one channel for communicating anesthesia gas and oxygen between the inlet and the one or more specimen interfaces.
11. The gas delivery system of claim 10 wherein the at least one channel comprises a buffer volume sufficiently large to substantially reduce flow rate fluctuations from the multiple specimen interfaces.
12. The gas delivery system of claim 10 further comprising a disposable sleeve inserted within a specimen interface, the disposable sleeve having a smaller orifice at the at least one channel and a larger orifice distal from the at least one channel.
13. The gas delivery system of claim 1 wherein each of the one or more living specimen interfaces includes multiple specimen interfaces that provide a substantially equal flow relative to each other.
14. An imaging system for capturing an image of a living specimen with a camera, the system comprising:

an imaging box having a set of walls enclosing an interior cavity and a camera mount configured to position the camera relative the interior cavity; and

a gas delivery system comprising;

an oxygen inlet that receives oxygen from an oxygen source;

a pressure regulator having an inlet that receives oxygen from the oxygen inlet and having an outlet that provides oxygen at a lower pressure;

an anesthesia gas source having an inlet coupled to receive low pressure oxygen from the outlet of the pressure regulator and capable of adding anesthesia gas to the low pressure oxygen;

a first gas delivery outlet coupled to a gas delivery device that may be placed in the imaging box interior cavity, the gas delivery device having one or more living specimen interfaces and capable of providing anesthesia gas and oxygen to the one or more living specimen interfaces when in the imaging box interior cavity; and

a second gas delivery outlet coupled to an induction chamber and capable of providing anesthesia gas and oxygen to the induction chamber.

15. The imaging system of claim 14 wherein the first gas delivery outlet comprises an outlet port and a first flow control disposed between the anesthesia gas source and the outlet port.

16. The imaging system of claim 15 wherein the second gas delivery outlet comprises an outlet port and a second flow control disposed between the anesthesia gas source and the outlet port.

17. The imaging system of claim 16 wherein the first and second flow control each allow independent flow control of gases to the first gas delivery outlet and to the second gas delivery outlet.

18. The imaging system of claim 17 wherein the first flow control allows control of gases from about 0 L/min to about 5 L/min to the first gas delivery outlet.

19. The gas delivery system of claim 14 wherein the induction chamber further comprises a gas scavenging system that collects anesthesia gas and oxygen that escape from the induction chamber interior.

20. The gas delivery system of claim 14 further comprising a purge inlet capable of providing oxygen to the induction chamber interior.
21. The gas delivery system of claim 14 wherein the gas delivery device further comprises an inlet for receiving anesthesia gas and oxygen and at least one channel for communicating anesthesia gas and oxygen between the inlet and the one or more specimen interfaces.
22. The gas delivery system of claim 21 wherein the at least one channel comprises a buffer volume sufficiently large to substantially reduce flow rate fluctuations from the multiple specimen interfaces.
23. A gas delivery device capable of providing anesthesia gas and oxygen to multiple living specimens, the gas delivery device comprising an inlet for receiving anesthesia gas and oxygen, multiple specimen interfaces, and at least one channel for communicating anesthesia gas and oxygen between the inlet and the multiple specimen interfaces, wherein the at least one channel comprises a buffer volume sufficiently large to substantially reduce flow rate fluctuations to the multiple specimen interfaces.
24. The gas delivery device of claim 23 further comprising a disposable sleeve inserted within a specimen interface, the disposable sleeve having a smaller orifice at the at least one channel and a larger orifice distal from the at least one channel.
25. The gas delivery device of claim 24 wherein the disposable sleeve is frustoconical.
26. The gas delivery device of claim 23 wherein the channel substantially spans the length of the gas delivery device.
27. The gas delivery device of claim 23 further comprising a vertical slot disposed between two adjacent specimen interfaces, wherein the vertical slot is capable of receiving and holding a light barrier.

28. The gas delivery device of claim 23 further comprising a scavenger system capable of drawing in anesthesia gas output from one or more of the specimen interfaces, the scavenger system comprising:

an exhaust port for coupling to a conduit;

at least one hole capable of drawing in anesthesia gas when a suitable negative pressure is applied thereto; and

at least one channel capable of communicating gases between the at least one hole and the exhaust conduit.

29. The gas delivery device of claim 28 wherein the scavenger system comprises an array of holes perimetrically disposed about one of the specimen interfaces.

30. The gas delivery system of claim 23 wherein each of the one or more living specimen interfaces includes multiple specimen interfaces that provide a substantially equal flow relative to each other.

31. An induction chamber capable of providing anesthesia gas to a living specimen, the induction chamber comprising:

a set of walls defining an induction chamber interior, the set of walls including a movable wall that is movable between an opened condition that enables access to the interior, and a closed condition that positions the movable wall to prevent access through an opening and that seals the induction chamber interior from gaseous communication with the environment exterior to the induction chamber;

a gas inlet capable of receiving anesthesia gas and providing the anesthesia gas to the interior of the chamber; and

a scavenging system comprising a skirt affixed to the set of walls, the skirt including a set of holes disposed outside the induction chamber interior, the set of holes capable of collecting anesthesia gas outside the induction chamber when a suitable negative pressure is applied thereto.

32. The induction chamber of claim 31 wherein the movable wall is a top lid.

33. The induction chamber of claim 31 further comprising an exhaust port capable of collecting gas from within the interior of the chamber through one of the induction chamber walls when a suitable negative pressure is applied thereto.

34. The induction chamber of claim 31 further comprising a set of collecting channels in gaseous communication with the set of holes and an exhaust conduit in gaseous communication with the set of collecting channels.

35. The induction chamber of claim 34 wherein the set of holes are peripherally disposed about the induction chamber.

36. The induction chamber of claim 34 wherein the skirt is attached to the bottom of the set of walls.

37. The induction chamber of claim 31 further comprising a purge inlet capable of providing oxygen to the induction chamber interior.

38. An imaging system for capturing an image of a living specimen with a camera, the system comprising:  
an imaging box having a set of walls enclosing an interior cavity and a camera mount configured to position the camera relative the interior cavity; and  
a gas delivery system including:  
an oxygen inlet that receives oxygen from an oxygen source;  
an anesthesia gas source having an inlet coupled to receive oxygen and capable of adding anesthesia gas to the oxygen; and  
a gas delivery outlet coupled to a gas delivery device that may be placed in the imaging box interior cavity, the gas delivery device having one or more living specimen interfaces and capable of providing anesthesia gas and oxygen to the one or more living specimen interfaces when in the imaging box interior cavity, the gas delivery device also including a scavenger system capable of drawing in anesthesia gas output from one or more of the specimen interfaces, the scavenger system comprising an exhaust port for coupling to a conduit, at least one hole capable of drawing in anesthesia gas when a suitable negative pressure is applied thereto, and at least one channel capable of communicating gases between the at least one hole and the exhaust conduit.